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09/811,367	03/16/2001	Nobuaki Takahashi	021286/027 8719	6403

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EXAMINER
HUYNH, PHUONG N

ART UNIT	PAPER NUMBER
1644	16

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicati n No.	Applicant(s)	
	09/811,367	TAKAHASHI ET AL.	
	Examiner	Art Unit	
	Phuong Huynh	1644	

-- The MAILING DATE f this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *Three* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39 and 41-72* is/are pending in the application.

4a) Of the above claim(s) *1-39 and 41-64* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *65-72* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *4/7/03* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. Claims 1-39 and 41-72 are pending.

2. Newly submitted claims 63-64 and amended claims 39, and 41-62 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: A method of inhibiting an NK or T cell expressed cell surface MAFA binding to a ligand on target cell using a distinct product such as a soluble MAFA extracellular domain (polypeptide) versus an anti-MAFA antibody that differs with respect to their structure and physiochemical properties such as inhibiting or stimulating cytotoxic activity of NK or T cells. Therefore, they are patentably distinct. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 1-39, and 41-64 are withdrawn from consideration as being directed to non-elected inventions. See 37 CFR 1.142(b) and MPEP § 821.03.

3. Claims 65-72 drawn to a method for inhibiting an NK or T cell expressed cell surface MAFA binding to a ligand on target cell using an anti-MAFA antibody is being acted in this Office Action.

4. In view of the amendment filed 4/7/03, the following objection remains.

5. The disclosure stands objected to because of the following informalities: (1) the "ATCC ___" on page 5 lines 5-9, and page 7, lines 19-23 need to be filled out. Appropriate action is required. It is noted that Applicants requested that this objection be held in abeyance until notification of allowable subject matter.

6. The following new grounds of rejection are necessitated by the amendment filed 4/7/03.

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 65-72 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling only for (1) a method for inhibiting an NK or T cell expressed cell surface Mast Cell Function Associated Antigen (MAFA) binding to a ligand on a target cell comprising the following steps (a) providing an anti-MAFA antibody or binding fragment thereof that binds specifically to the extracellular domain of human, rat, and mouse MAFA extracellular domain as set forth in the extracellular of SEQ ID NO: 1, 3, 5, respectively or wherein the mouse MAFA extracellular domain consisting of amino acid residues 64 to 188 of SEQ ID NO: 5, and that the binding of the antibody to the extracellular domain of MAFA inhibits the binding of the NK or the T cell expressed cell surface MAFA to its target cell ligand and (b) contacting the anti-MAFA antibody or binding fragment thereof to the NK or the target cell in an amount sufficient to inhibit cell surface MAFA binding to the ligand on the target cell, (2) the method mentioned above wherein the contacting is in vitro or ex vivo, (3) the said method wherein the anti-MAFA antibody or binding fragment thereof generates an inhibitory signal to the NK or the T cell that inhibits cytotoxicity activity of the NK or T cell, **does not** reasonably provide enablement for (1) a method for inhibiting an NK or a T cell expressed cell surface MAFA binding to a ligand on a target cell comprising the following steps (a) providing *any* "agonist anti-MAFA antibody" or any "subsequence of any agonist anti-MAFA antibody" that inhibits the binding of the NK or the T cell expressed cell surface MAFA to its target cell ligand; and (b) contacting *any* "agonist anti-MAFA antibody" or *any* "subsequence of any agonist anti-MAFA antibody" to the NK or the T cell or the target cell in an amount sufficient to inhibit cell surface MAFA binding to the ligand on the target cell, (2) the method for inhibiting an NK or a T cell expressed cell surface MAFA binding to a ligand on a target cell comprising the following steps (a) providing *any* "agonist anti-MAFA antibody" or any "subsequence of any agonist anti-MAFA antibody" that inhibits the binding of the NK or the T cell expressed cell surface MAFA to its target cell ligand; and (b) contacting *any* "agonist anti-MAFA antibody" or *any* "subsequence of any agonist anti-MAFA antibody" to the NK or the T cell or the target cell in an amount sufficient to inhibit cell surface MAFA binding to the ligand on the target cell wherein the contacting is in vitro or ex vivo or in vivo, (3) the method for inhibiting an NK or a T cell expressed cell surface MAFA binding to a ligand on a target cell comprising the following steps (a) providing *any* "agonist anti-MAFA antibody" or any "subsequence of any agonist anti-MAFA antibody" that inhibits the binding of the NK or the T cell expressed cell surface MAFA to its target cell ligand; and (b) contacting *any* "agonist anti-MAFA antibody" or *any* "subsequence of any agonist anti-MAFA antibody" to the

NK or the T cell or the target cell in an amount sufficient to inhibit cell surface MAFA binding to the ligand on the target cell wherein the contacting is in vivo, wherein the in vivo contacting comprises administering the any agonist-anti-MAFA antibody or any subsequence of any agonist anti-MAFA antibody to any subject such as a mammal, or a human, (4) the method for inhibiting an NK or a T cell expressed cell surface MAFA binding to a ligand on a target cell comprising the following steps (a) providing *any* "agonist anti-MAFA antibody" or any "subsequence of any agonist anti-MAFA antibody" that inhibits the binding of the NK or the T cell expressed cell surface MAFA to its target cell ligand; and (b) contacting *any* "agonist anti-MAFA antibody" or *any* "subsequence of any agonist anti-MAFA antibody" to the NK or the T cell or the target cell in an amount sufficient to inhibit cell surface MAFA binding to the ligand on the target cell wherein the agonist anti-MAFA antibody or subsequence of the agonist-anti-MAFA antibody generates an inhibitory signal to the NK or the T cell that inhibits any activity of the NK or T cell, and (5) the method for inhibiting an NK or a T cell expressed cell surface MAFA binding to a ligand on a target cell comprising the following steps (a) providing *any* "agonist anti-MAFA antibody" or any "subsequence of any agonist anti-MAFA antibody" that inhibits the binding of the NK or the T cell expressed cell surface MAFA to its target cell ligand; and (b) contacting *any* "agonist anti-MAFA antibody" or *any* "subsequence of any agonist anti-MAFA antibody" to the NK or the T cell or the target cell in an amount sufficient to inhibit cell surface MAFA binding to the ligand on the target cell wherein the agonist anti-MAFA antibody or subsequence of the agonist-anti-MAFA antibody generates an inhibitory signal to the NK or the T cell that inhibits *any* activity of the NK or T cell wherein the activity inhibited comprises NK cell or T cell mediated cytotoxicity or secretion of *any* cytokine for treating *any* disease such as tumor or viral disease. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in **scope** with these claims.

Factors to be considered in determining whether undue experimentation is required to practice the claimed invention are summarized *In re Wands* (858 F2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988)). The factors most relevant to this rejection are the scope of the claim, the amount of direction or guidance provided, the lack of sufficient working examples, the unpredictability in the art and the amount of experimentation required to enable one of skill in the art to practice the claimed invention. The specification disclosure is insufficient

The specification discloses only MAFA from human, rat and mouse comprising SEQ ID NO: 1, 3 and 5, respectively. The specification further discloses antibody that binds to the extra-cellular domain of mouse MAFA wherein the extracellular domain consisting of amino acid residues 64 to 188 of SEQ ID NO: 5 for making monoclonal antibodies, and a method for inhibiting NK or T cell expressed cell surface MAFA binding to a ligand on a target cell using the MAFA specific monoclonal antibody selected from the group consisting of 1F10 and 7B5 or the F(ab')2 binding fragment of said antibody in vitro or ex vivo. The said monoclonal antibody **inhibits** the cytotoxic activity of NK cells or T cells (page 29, and 31). The specification further discloses a method for enhancing the cytotoxic activity of NK cell using recombinant soluble MAFA (Fig 2, page 30) and this cytotoxic or cytolytic activity of NK cell can be inhibit by anti-MAFA antibody mentioned above (See page 31).

The specification does not provide sufficient guidance for a method for inhibiting an NK or a T cell expressed cell surface MAFA binding to a ligand on a target cell because the specification discloses only three MAFA sequences from human, rat and mouse. There is insufficient guidance as to other undisclosed MAFA. Further, there is insufficient guidance about chemical structure of the immunogen (the specific amino acid sequence of immunogen used by Applicants to make any agonist anti-MAFA antibody), the binding specificity, the epitope to which *any* undisclosed agonist anti-MAFA antibody, or *any* subsequence of any undisclosed agonist anti-MAFA antibody binds for the claimed method. The specification on page 10, lines 13-21 discloses that the "agonist" effect is that the antibody recognize an NK or T cell surface-expressed MAFA... the rat anti-mouse MAFA monoclonal antibodies inhibit the cytotoxicity of mouse NK cells and CTLs. Although the specification discloses the subsequence of MAFA is the soluble extracellular domain of mouse MAFA amino acids 64 to 188, the disclosure does not provide guidance as how to determine the subsequence of *any* agonist antibody.

Kuby *et al*, of record, teach that antibody epitopes (B cell epitopes) are not linear and are comprised of complex three-dimensional array of scattered residues which will fold into specific conformation that contribute to binding (See Kuby 1994, page 94, in particular). Immunization with a peptide fragment derived from a full-length polypeptide may result in **antibody specificity** that differs from the antibody specificity directed against the native full-length polypeptide. Without the specific amino acid residues, it is unpredictable to determine which undisclosed subsequence of *any* anti-MAFA antibody wherein the subsequence "comprises" an antigen

binding site would have the same antibody specificity as an antibody generated from the full-length polypeptide.

Ngo *et al*, of record, teach that the amino acid positions within the polypeptide/protein that can tolerate change such as conservative substitution or no substitution, addition or deletion which are critical to maintain the protein's structure/function will require guidance (see Ngo et al., 1994, The Protein Folding Problem and Tertiary Structure Prediction, pp. 492-495).

Abaza *et al*, of record, teach that even a single amino acid substitution outside the antigenic site can exert drastic effects on the reactivity of a protein with monoclonal antibody against the site (See abstract, in particular). Since the agonist anti-MAFA antibody and subsequence of any undisclosed agonist anti-MAFA antibody are not enable, it follows that the method of inhibiting the binding of the NK or the T cell expressed cell surface MAFA to its target cell ligand in vitro is not enabled, much less in vivo.

With regard to *any* subsequence of any MAFA antibody, the specification discloses only two specific MAFA antibodies such as 1F10 and 7B5 or the F(ab')2 binding fragment of said antibody that can inhibit NK and CTL activity. Other than the specific MAFA antibodies for a method of inhibiting NK or T cell expressing cell surface MAFA binding to a ligand on a target cell and inhibiting NK or T cell mediated cytotoxicity in vitro or ex vivo, there is insufficient guidance and in vivo working examples demonstrating that *any* "subsequence of *any* agonist anti-MAFA antibody" can inhibit NK or T cell killing of tumor cell or viral infected cell by secretion of *any* cytokine. There is insufficient guidance about the binding specificity of *any* "subsequence of any agonist anti-MAFA antibody" for inhibiting NK or T cell cytotoxicity or cytokine secretion. The specification on page 10, lines 13-21 discloses that the "agonist" effect is that the antibody recognize an NK or T cell surface-expressed MAFA... the rat anti-mouse MAFA monoclonal antibodies inhibit the cytotoxicity of mouse NK cells and CTLs. Although the specification discloses the subsequence of MAFA is the soluble extracellular domain of mouse MAFA amino acids 64 to 188, the disclosure does not provide guidance as how to determine the subsequence of *any* agonist anti-MAFA antibody.

Even if the claimed method is limited to the specific antibody such as 1F10 and 7B5 antibodies, there is no vivo working example demonstrating that the anti-MAFA could treat any disease. Given the indefinite number of undisclosed disease, there is insufficient guidance as to which specific disease that the claimed method could treat upon administering the anti-MAFA antibody or any undisclosed subsequence of any agonist anti-MAFA to mammal such as humans.

The specification does not teach how to extrapolate data obtained from in vitro binding inhibition assays to the development of effective in vivo human therapeutic compositions, commensurate in scope with the claimed invention. Therefore, it would require undue experimentation of one skilled in the art to practice the claimed invention. See page 1338, footnote 7 of Ex parte Aggarwal, 23 USPQ2d 1334 (PTO Bd. Pat App. & Inter. 1992).

In re wands, 858 F.2d at 737, 8 USPQ2d at 1404 (Fed. Cir. 1988), the decision of the court indicates that the more unpredictable the area is, the more specific enablement is necessary. In view of the quantity of experimentation necessary, the limited working examples, the unpredictability of the art, the lack of sufficient guidance in the specification and the breadth of the claims, it would take an undue amount of experimentation for one skilled in the art to practice the claimed invention.

Applicants' arguments filed 4/7/03 have been fully considered but are not found persuasive.

Applicants' position is that (1) the specification teaches how to make polyclonal and monoclonal antibody without undue experimentation. (2) The specification exemplifies producing anti-MAFA antibodies IF10 and 7B5 having the requisite agonist activity (See page 29, line to page 30, line 7, page 31, lines 4-18). (3) As to making subsequences and other forms of agonist anti-MAFA antibody, the specification discloses various methods including chemical and recombinant synthesis, chimeric and humanization using recombinant in vivo methods as well as using phage display methods. (4) In regard to the cited Kuby, Ngo, and Abaza et al references, these references are published in 1992 and 1994 and cannot fairly be said to represent the state of the art at the time the application was filed in 2001. (5) Even if some experimentation is needed in order to practice the full scope of the claimed invention, simply because experimentation may be needed does not render the claims inadequately enabled.

However, there is insufficient guidance as to the biochemical information such as the specific amino acid sequence of the immunogen used by Applicant to generate any antibody that has "agonistic" activity such as inhibiting the secretion of any cytokine in vitro, inhibiting NK or T cell killing, much less for administering in vivo to a subject such as human for treating any disease such as cancer, viral infectious disease or transplant rejection. Other than the specific MAFA, and the specific anti-MAFA, there is insufficient guidance as to the binding specificity of any undisclosed agonist anti-MAFA antibody or subsequence of any undisclosed anti-MAFA antibody, let alone administering it in vivo to a subject such as a human for treating any disease.

Given the indefinite number of disease, the specification does not adequately teach how to effectively treat any disease or reach any therapeutic endpoint in humans by administering any agonist such as anti-MAFA or any subsequence of any undisclosed agonist anti-MAFA antibody. The specification does not teach how to extrapolate data obtained from in vitro binding inhibition assays to the development of effective in vivo human therapeutic compositions, commensurate in scope with the claimed invention. Therefore, it is not clear that the skilled artisan could predict the efficacy of the antibody exemplified in the specification encompassed by the claims.

As to item 3, the specification discloses that the subsequence is the extracellular domain of mouse MAFA amino acids 64 to 188 (page 26, lines 24-26). The specification does not disclose the subsequence of agonist anti-MAFA that has agonist activity. The specification on page 11 defines the term antibody, and antigen binding fragment includes a Fab fragment, F(ab')2, dab, Fv fragment. However, the term "subsequence of any agonist antibody" has no structure much less about its function.

9. Claims 65-72 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

The specification does not reasonably provide a **written description** of a method for inhibiting any NK or T cell expressed cell surface MAFA binding to *any* ligand on a target cell using (1) *any* agonist anti-MAFA antibody and (2) any subsequence of any agonist anti-MAFA antibody for administering to a subject such as human for inhibiting cell surface MADA binding to the ligand on the target cell, inhibiting NK cell or T cell mediated cytotoxicity or secretion of any cytokine for treating any disease.

The specification discloses only MAFA from human, rat and mouse comprising SEQ ID NO: 1, 3 and 5, respectively. The specification further discloses antibody that binds to the extra-cellular domain of mouse MAFA wherein the extracellular domain consisting of amino acid residues 64 to 188 of SEQ ID NO: 5 for making monoclonal antibodies, and a method for inhibiting NK or T cell expressed cell surface MAFA binding to a ligand on a target cell using the MAFA specific monoclonal antibody selected from the group consisting of 1F10 and 7B5 or the F(ab')2 binding fragment of said antibody in vitro or ex vivo. The said monoclonal antibody **inhibits** the cytotoxic activity of NK cells or T cells (page 29, and 31). The specification further

discloses a method for enhancing the cytotoxic activity of NK cell using recombinant soluble MAFA (Fig 2, page 30) and this cytotoxic or cytolytic activity of NK cell can be inhibit by anti-MAFA antibody mentioned above (See page 31).

With the exception of the specific MAFA polypeptides, the anti-MAFA antibodies that bind to the specific polypeptides and the antigen binding fragment thereof for a method for inhibiting cell surface MAFA binding to the ligand on the target cell or inhibiting of NK cell or T cell mediated cytotoxicity in vitro or ex vivo, there is inadequate written description about the structure associated with function of any MAFA polypeptide, *any* agonist anti-MAFA that binds to any MAFA, any subsequence of any agonist anti-MAFA, much less about the method for inhibiting cell surface MAFA binding to the ligand on the target cell in vivo such as administering said undisclosed agonist anti-MAFA antibody or subsequence of any agonist anti-MAFA to a mammal such as human to inhibit NK cell or T cell mediated cytotoxicity or secretion of any cytokine in vitro or ex vivo.

Given the lack of a written description of *any* additional representative species of MAFA, and agonist anti-MAFA antibody and subsequence of any anti-MAFA antibody that bind to any MAFA for the claimed method, one of skill in the art would reasonably conclude that the disclosure fails to provide a representative number of species to describe the genus. Thus, Applicant was not in possession of the claimed genus. *See University of California v. Eli Lilly and Co. 43 USPQ2d 1398.*

Applicant is directed to the Revised Interim Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1 "Written Description" Requirement, Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001.

Applicants' arguments filed 4/7/03 have been fully considered but are not found persuasive.

Applicants' position is that (1) the specification discloses three mammalian MAFA sequences human, rat and mouse. (2) The specification exemplifies producing anti-MAFA antibodies IF10 and 7B5 having the requisite agonist activity (See page 29, line to page 30, line 7, page 31, lines 4-18). (3) As to subsequences of anti-MAFA antibody, the specification discloses antigen binding portions such as Fab, VL, VH, CL and CH1 domain.

However, with the exception of the specific MAFA polypeptides, the anti-MAFA antibodies that bind to the specific polypeptides and the antigen binding fragment thereof for a method for inhibiting cell surface MAFA binding to the ligand on the target cell or inhibiting of

NK cell or T cell mediated cytotoxicity in vitro or ex vivo, there is inadequate written description about the structure associated with function of any MAFA polypeptide, *any* agonist anti-MAFA that binds to any MAFA, any subsequence of any agonist anti-MAFA, much less about the method for inhibiting cell surface MAFA binding to the ligand on the target cell in vivo such as administering said undisclosed agonist anti-MAFA antibody or subsequence of any agonist anti-MAFA to a mammal such as human to inhibit NK cell or T cell mediated cytotoxicity or secretion of any cytokine in vitro or ex vivo. Let alone the claimed method of using any undisclosed anti-MAFA antibody or subsequence of any undisclosed anti-MAFA antibody for administering in vivo to any mammal such as human for treating any disease.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

11. Claims 65-71 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The "subsequence" in claims 65, 68 and 71 is ambiguous and indefinite; one of ordinary skill in the art cannot appraise the metes and bounds of the claimed invention. It is suggested that the "antigen binding site" be added to the subsequence or change the "subsequence" to "antigen binding fragment of an anti-MAFA" as disclosed on page 11, line 19 of the specification, for example.

Claims 66, 67 and 71 should depend from claim 65 because claim 62 is drawn to a non-elected invention.

The "in vivo" in claim 68 has no antecedent basis in base claim 64. Claim 68 should depend from claim 67.

The "subject" in claim 69 has no has no antecedent basis in base claim 65. Claim 69 should depend from claim 68.

The "mammal" in claim 70 has no has no antecedent basis in base claim 66. Claim 70 should depend from claim 69.

The "activity" in claim 72 has no has no antecedent basis in base claim 68. Claim 72 should depend from claim 71.

12. No claim is allowed.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to "Neon" Phuong Huynh whose telephone number is (703) 308-4844. The examiner can normally be reached Monday through Friday from 9:00 am to 6:00 p.m. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-0196.

15. Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 305-7401.

Phuong N. Huynh, Ph.D.
Patent Examiner
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June 30, 2003

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